

## PARTICIPATORY FARMING

The PPP mode of operation has made the culture a success in the locality and more cages are being installed in the next season with seed input from the group. The involvement of the farmer with feed, seed and labour inputs have made the culture a truly responsible as well as profitable.

Economic evaluation of GIFT Tilapia culture in backwater cage during first crop

Item	Cost (Rs.)
<b>1. Variable costs</b>	
GIFT seed (3000 Nos)	5,000.00
Artificial feed (800 kg @Rs.34/kg)	27,200.00
Labour	10,000.00
Harvest	1,000.00
Total variable costs	43,200.00
<b>2. Fixed costs</b>	
Cage frame, net etc	50,000.00
Depreciation (materials & others) (12%)	6,000.00
Total fixed costs	56,000.00
Total operating costs (variable + fixed) (a)	99,200.00
<b>3. Return</b>	
Total return (600kg fish@Rs.200/kg) (b)	1,20,000.00
Net Returns (total returns - costs)	20,800.00
Operating ratio (a/b)	0.826



Economic evaluation of GIFT Tilapia culture in backwater cage during subsequent crop

Item	Cost (Rs.)
<b>1. Variable costs</b>	
GIFT seed (5000 Nos)	5,000.00
Artificial feed (800 kg @Rs.34/kg)	27,200.00
Labour	10,000.00
Harvest	1,000.00
Total variable costs	43,200.00
<b>2. Fixed costs Nil</b>	
(The cage and nets can be reused)	
Total operating costs (variable + fixed) (a)	43,200.00
<b>3. Return</b>	
Total return (600kg fish @Rs.200/kg) (b)	1,20,000.00
Net Returns (total returns - costs)	76,800.00
Operating ratio (a/b)	0.360

CMFRI supports the farmers and small entrepreneurs with technical inputs for farming of GIFT in cages. Prospective farmers may contact CMFRI for technical expertise.

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# Cage Culture of GIFT Tilapia:

A Farming Option During Monsoon Season in Traditional Shrimp Ponds



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Tilapia is emerging as an important species for aquaculture in India. Tilapia has many desirable qualities like high stocking density, resistance to diseases, omnivorous feeding habit etc. Most tilapia stocks in the world were of poor genetic quality and the innovation of World Fish Centre with the Genetically Improved Farmed Tilapia (GIFT) has been a boon to the aquaculturists. The Rajiv Gandhi Center for Aquaculture (RGCA) has been successful in developing the GIFT strain for aquaculture development in the country and is involved in the commercial production of tilapia fish fingerlings in Vijayawada (Andhra Pradesh) hatchery. As a farming option during south-west monsoon season in Kerala when the traditional shrimp farms remain flooded due to

the heavy freshwater influx, cage culture of GIFT was found viable and it was able to tolerate 0 to 17 ppt salinity prevalent from June to December months.

### FRY PROCUREMENT AND NURSERY REARING

During June 2013 GIFT seed measuring <5 cm, procured from Rajiv Gandhi Centre for Aquaculture (RGCA) unit at Vijayawada, Andhra Pradesh were reared for two months in a closed nursery pond of about 5 cents area. They were fed on natural algal biomass in the pond during the nursery phase. After 60 days on attaining 25-35 g, about 1500 nos were transferred to a square galvanized iron (GI) cage measuring 4 m x 4 m inner frame and 4.5 m x 4.5 m outer frame.

### GROW-OUT CULTURE IN CAGE

As an initial attempt, a farm registered for GIFT farming at Panampukad, Cochin was chosen. All biosecurity measures for tilapia farming were strictly followed during the entire operation.

The dismantling and re-assembling type GI cage was installed in the sluice pit of about 30 cents area at a depth of 3.75 m by fixing bamboo poles at four corners.

The net depth was 3.5 m, which was tied at the top to the hand rail, 90 cm above the base frame. The nets were also tied at the corners to the bamboo poles. An inner grow-out, outer (40 mm mesh) and bird nets (60 mm) made of HDPE twisted twine were fixed from the cage frame. A high density polyethylene pipe (HDPE) filled with weight was inserted inside the inner net and was tied to the poles for keeping the net shape intact. The mesh size of the grow-out net had been varied between 16 mm and 40 mm based on the growth of the fish. The volume of the net in the water was 57m<sup>3</sup>.

The fish were fed with 2 mm commercial floating pellets of 32% crude protein @ 5% body weight during the first month in the cage and later with 4 mm pellets of 24% protein at the same rate. As a supplement, duck weed and azolla were also provided on alternate days (5-8 kg/ day). After

three months of grow-out period in the cage, the fish had attained an average weight of 450 g. The weight ranged between 300-600 g. On harvest about 600 kg of fish were caught. The price realised at farm gate was Rs.200/kg. The flesh quality based on report of a taste panel (public of different categories) was found to be superior with appealing flavour and fat content. This has more emphasis because tilapias are not a favoured fish in Kerala due to its regular low flesh quality. About 600 kg (Rs.34/kg) feed was used and the FCR was 1:1. The cage frame as well as net can be re-used for many cultures and it was observed that GIFT tilapia is a good option for farming during monsoon season under fresh to low saline (0-15 ppt) conditions.

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